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GLANCES AT FORESTRY IN FRANCE

IN 1660 & 1880.

BY THE REV. J. C. BROWN, LL.D.

*Reprinted from the "Journal of Forestry and Estates Management,"
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I.—FOREST ECONOMY IN FRANCE IN THE SEVENTEENTH CENTURY.

FROM each country on the continent of Europe may be drawn illustrations of some different phase of Forest Economy. In France may be traced its progressive development till it was arrested by the outburst of the Revolution. In Saxony may be traced its full development into its modern form. In Sweden may be traced the application to forests previously unkempt and uncared for; and in France again, may be traced the practical application fully developed. In Belgium, Denmark, Norway, Sweden, Finland, Russia, Austria, Italy, and Spain, may be seen subordinate phases of forestry not less marked and distinct. Here we have to do with France alone.

M. A. Joubain, Inspector of Forests, gives in the *Revue des Eaux et Forêts, Annales Forestière* for April last (1879), the following account of the forest reforms carried out under Colbert.

Under what by Martin in his *Histoire de France* is called "the foolish and corrupt government of Marie de Medicis," the most serious abuses had obtained footing in all departments and offices of the State, Absorbed with the realization of three great projects, the weakening of Protestantism, the humiliation of the Great before the Royal power, and the securing of a preponderating influence for France in Europe, Richelieu had not time to attend sufficiently to the internal administration of the kingdom. His successor was in this respect incomparably worse. He himself set the example of dishonesty, and corruption amongst the representatives of government and amongst all holding authority of any kind became, especially during the latter years of his ministry, an evil so prevalent and so deep-rooted, that it must have appeared almost incurable.

In the midst of all this corruption, the officials of the mistress of the moors and forests unhappily did not maintain clean hands. The Royal Forests were, under the ministry of Mazarin, the theatre of hateful and innumerable abuses; but the death of the Cardinal was the precursor and signal of the most serious reforms in every administrative and judicial organization in the kingdom. Scarcely, indeed, had he succumbed, on the 9th of March, 1661, to the attacks of gout

which had tortured him for a long time, when Louis XIV. called together the other ministers and principal advisers of the Crown to declare to them that he willed from that time forward to be governor himself, and *to restore everything to order*. It was indeed a heavy task he had undertaken; but the King was not slow to prove that it was not beyond his strength. Aided, prompted even by Colbert, whom a thorough practical knowledge of business and exceptionally lofty views fitted for the conduct of all, he undertook without hesitation, and without misgiving or weakness, the great work of social reconstruction upon which he had been meditating for years.

In the month of September, as is known, the all-potent superintendent was arrested, and his trial was prosecuted with great rigour, in despite of the influence of high personages, and of the queen-mother herself, with the result of his being condemned, according to the memoirs of Madame de Motteville, as "a great robber." Two months after his arrest a royal ordinance instituted a Chamber of Justice for inquiring into abuses and malversations of finance committed from 1635 onward, which manifested all at once an energy and remarkable severity. *Maîtres des requêtes* were at the same time sent to different parts of the kingdom, to supply information to the king of everything relating to the administration. By this means all was brought to light in most provinces, and in others a salutary terror was spread amongst the guilty. The misdeeds of the forest officials, moreover, attracted the attention of Louis XIV. and of Colbert. On the 15th October, 1661, there was delivered a decree of council which, after having established that the greatest disorders had been introduced into the forests of the domaine, enjoined, with a view to avoid the complete annihilation of these, a reconnoissance of the area of each block; of the kinds of trees of which they were composed; of the fellings executed since 1635; of the portions alienated, usurped, or exchanged; of the number of parties holding rights, and of the returns from these. These *Reformations*, as in the language of the time and country they were called, comprised the complete forest service. They were to be reported by the Grand Masters, or failing them, by the Comptrollers-General of Waters and Forests. But, no doubt, it was not long before it was seen that the officers of the highest grades were often themselves implicated to a great extent in the criminal acts which they were required to point out, and it was decided very properly, to send into the provinces "Inquisitors" more independent and more trusty. These "Commissioners" were generally *Maîtres des requêtes*, or Chancellors of the King. They set to work in 1662, and in the year following, enlightened by their first reports, Colbert addressed to them, 10th March 1663, complete and detailed instructions in regard to the end of their mission, and the measures to be taken to accomplish this.

The principal passages of this document may enable any one without difficulty to conceive the fearful disorder.

The *instructions* pointed out for example, the greater part of the malversations to which officers of the Crown both high and low had given themselves. "It is well," it is said, "to remark in how many different ways the first officials can have abused the authority pertaining to their offices. The Grand Masters in taking under divers pretexts large gratuities for ordinary and extraordinary sales which they have made ;

"In making ordinary sales without letters patent ;

"In levying taxes to which they had no right ;

"In making more extensive surveys than is borne out by the documents ;

"In giving away a considerable number of acres under pretext of their being waste places ;

"In taking firewood either loose or in carts much beyond what was assigned to them by law ;

"In causing the firewood to be delivered at their houses ;

"In giving auction sales both ordinary and extraordinary to merchants with whom they had an understanding, and even to domestics ;

"In granting firewood and forest servitude without title, either for their personal profit or to gratify their friends ;

"In permitting the clearing of different lands,* and the building of houses within the forest bounds, and even establishments in the heart and within the skirts of the forests, and sometimes making alienations for entrance money of land of considerable extent and well-wooded under pretence of their being void and waste lands, from all of which they have derived great advantage to themselves. The officers of the different masterships have been guilty of the same abuses not only in the case of coppice woods, but even in permitting trees to be taken, and in themselves taking a great number, either for their houses and buildings or to dispose of them for money ;

"In granting valuable trees to different persons to the prejudice of the sales ;

"The discharge of the reports of the forest watchman has also been a great abuse in different Masterships, because that when a peasant has had a report made against him, he has been able to make up matters with the particular Master, and the watchmen seeing the inutility of their report have themselves taken money to abstain from action, so that all their forests have been given up to pillage."

These extracts are from *Lettres, instructions, et memoires de Colbert, publiés par Pierre Clement* (4 vols. folio), as are also others which follow.

The corruption was so general that the instructions enjoined the Commissioners to be on their guard against *all* the officers with whom they had any business transaction. "From the time that the Commissioner arrives in the locality of the Mastership of the forest which he seeks to reform, it is *necessary* that he take possession at once of the several offices, that he may acquire a thorough knowledge of all that has been done in the said Mastership ; and in order to effect this, if he cannot assure himself of the fidelity of the Keeper of the Records (*which will be difficult*), it may be well that he cause to be sealed up all the places in which there can be papers belonging to the officer, that an inventory may then be made of these ; or to set a watch of such a kind that the Keeper of the Records cannot make away with any of them.

"It is also necessary to observe in connection with the employment of a surveyor that he never employ one in the country or on the forests in which he has been accustomed to work. . . .

"The Commissioner in going to reconnoitre the boundaries and to trace the land-marks, should see that he be accompanied by the officers of the Mastership, *against whom he must be carefully on his guard*, particularly on land ruined and in bad condition, it being impossible but that they have contributed to this."

As for the procurators, Colbert did not for a moment doubt but that they had neglected *what was their duty* to exact, the penalties imposed to prevent the continuation of misdemeanours—"As the Commissioner," he writes, "will *doubtless* find out *an infinite number* of penalties which have not been paid, it is necessary he make choice of a good and honest man, who shall be commissioned by the king to receive these, and immediately to proceed against all those who have been condemned to pay them, that thereby there may be established a fear of trespassing in the forests, which might ruin them."

Under date of 28th January, 1664, a special ordinance was issued "for the reform of the woods and forests of Brittany." The preamble of this ordinance is of sufficient interest to justify citation at least in part. "Considering that the miserable condition in which all the woods and forests of the kingdom are to be found, leads to the conclusion that this is one of the great evils which the disorders of the bygone times have occasioned, and leads to the desire that the most prompt and efficacious remedies possible should be applied ; . . . and forasmuch as we have been advertised that one of the principal causes of the disorderly condition of our said woods and forests proceeds from the incapacity of some of the said officers of these, from malversation committed by them and by auctioneers at sales, and by the holders of property situated alongside of the woods and forests, and by the practised impunity, We will that We be informed precisely by Our said Commissioners, or those

whom they may sub-delegate to this effect, of the *peculations, exactions, and vexations* committed on our said woods and forests by the said officers and the said auctioneers, and adjacent property-holders." *

M. Joubain goes on to say Colbert watched with great attention to see that the decree of Council, the Instruction, and the Ordinance should not remain dead letters. He kept himself constantly well acquainted with the doings of the Commissioners, encouraging them in the discharge of their arduous duties, and watching over the execution of their decisions. On the 8th November, 1662, he wrote to Chamillard charged with the reformation of the forests of the Isle of France, and particularly with that of Compiègne:—"From the manner of procedure which you adopt you will have expert and perfect knowledge of all that is going on in the forests embraced by your Commission; but, above all things, *execute justice, spare no one, fear nothing.* . . . *With regard to the grants of firewood with which the Grand Masters have gratified their friends,* not only do I consider that there is ground on which to order restitution, but even that you will find that those who have so freely disposed of the King's property have incurred guilt. *It is necessary to bring the greatest severity to bear upon those who have committed misdemeanours in the forests,* and who have reduced them to the condition in which they are."

On the 1st of June, 1663, he sent word to M. de Mauroy, Commissioner for the Reformation of the Forests of Burgundy:—"Provided that the legal proceedings which you institute against the ecclesiastics who have damaged the timber forests without verified letters patent,

* To many it may seem that such a picture must have been drawn under the influence of a morbid state of mind, and a melancholic view of men and things. Without entering on an investigation of this, or attempting proof or disproof of its being the case, I may state in support of its verisimilitude, that a similar state of things seemed to exist in Russia during my residence in that country from 1833 to 1840, and to have prevailed long. That a similar state of things existing in the management of the Crown woods and forests of Great Britain was brought to light by evidence collected by a Committee of the House of Commons in 1848 and 1849. And a somewhat similar state of things existing in the management of Crown forests in the colony of the Cape of Good Hope was reported by me in a Memoir on the conservation and extension of forests as a means of counteracting the disastrous consequences following the destruction of bush and herbage by fire, appended to my report as Colonial Botanist for 1863; in Memoirs on forests and forest lands of Southern Africa, and on the forest economy of the colony, abstracts of which were appended to my report as Colonial Botanist for 1866; in evidence given by me before a Select Committee of the Legislative Council, to consider the Colonial Botanist's Report, 14th August, 1865; and in evidence collected by a Commission. As regards South Africa, these allegations have reference to reckless waste alone.—J. C. B.

be in proper form and due order, *do not*, if you please, *put yourself to the trouble of doing everything which may be done to screen them.*"

From the *Histoire de Colbert*, by Pierre Clement, we learn that by reason of facts established by a Commission of Forest Reformation, a sergeant of the forests of the Generality of Alençon had been condemned to the galleys. "His punishment," wrote Colbert, "will assuredly serve as an example; and it will be well that you give, if you please, the necessary order for his being taken to La Toulon *with the first chain.*"

Although the registers of the despatches of Colbert for the years 1668—1670 have, unfortunately, not been found, his incessant activity in endeavouring to put a stop to the destruction of the wooded domains of France, and to restore her forest wealth, may be considered sufficiently demonstrated by what has been advanced. His *Mémoire sur les Forêts*, presented to the King in 1665, will supply, if need be, one more proof. This document, in which he establishes with regret that the forests of the kingdom had been sacrificed for a long time, and that they had never been treated so as to leave reserves and produce for great occasions, was, in some respects the *avant-courier* of the celebrated Ordinance of 1669.*

In the Journal of Forestry pp. 8-13 follow p. 24.

> The king himself on his side took the greatest interest in, and attached the greatest importance to the re-establishment of a proper and intelligent administration of the forests. Of this we have unquestionable evidence in the memoirs and instructions drawn out by Pellisson, *from his notes and under his own eyes*, and which he designed for the Dauphin, his grandson. Under date of 1662 we read in these, "I have applied myself also this year to a code of regulations for the forests of my kingdom, *in which the decrease was very great, and displeased me so much the more* that I had formed and entertained for a long time great designs for the navy. The war and the schemes of partisans to make money had produced an influx of officers *des eaux et forêts*, as of all other kinds. The war and the schemes themselves consumed or reduced their wages, of which they had only made a vain show in creating their officers. They avenged themselves and paid themselves, *and that with usury*, at the expense of the forests which had been entrusted to them. There were no kinds of artifices with which these officers were not familiar, *even to the burning by design of a portion of the standing trees*, that they might have ground to take the remainder as burned by accident. I have only succeeded in the last year to prevent the evil augmenting by prohibiting that any sale should be made until I had ordered it otherwise. This year I

* There might be cited also his letter of 7th August, 1666, to the poet La Fontaine, *Maître des Eaux et Forêts* à Château Thierry, preserved in *Œuvres de La Fontaine*, édition Walckenaer.

have applied two prompt remedies: the one has reduced the officers to a small number, whose salaries can be paid without inconvenience, and upon whom it is easy to keep an eye; the other has instituted inquiry into past malversations, which may not only serve as a warning for the future, but which by the considerable restitutions which will be enforced will contribute in part to the reimbursement of the expense of the officers suppressed."

As may have been anticipated, the Commissioners entrusted with the reformation did not fail to encounter great resistance on the part of all those foresters, merchants, and border proprietors, who had derived profit from the deplorable *régime* to which Louis XIV. and his ministers had determined to put an end. Thus in the administration of Alençon it was, according to a letter from Colbert to M. Flavier du Beulay, of 4th June, 1666, cited by P. Clément necessary to break up "the monopolies of the officers, and the merchants" to give up for many years having any sales. But prompted, encouraged, and energetically sustained by the king and by Colbert, and armed with the most extensive powers, the Commissioners were able to show themselves equal to the accomplishment of the task which had been entrusted to them. They did not recoil before either toilsome hours of inspection, and long and troublesome researches, or before high influences and lively oppositions; they neither hesitated to prosecute great and small, nor to pronounce the most serious sentences.*

The names of some of these good and eminent men, associated with one of the most useful works of the reign of Louis XIV., have come down to our day; as have those of de Chamillard, of Flavier du Beulay, of Hotenau, of de Fontenoy, of Colbert de Croissy, of Barentin, and of Lallemand de Lestrée. As for their works, the reports of some have in part or in whole been preserved, and better, perhaps, than even the document of which mention has been made. One of the reports permits us to form an exact idea of the condition of the forests, and of the criminal proceedings into which the officers allowed themselves to be drawn, and, in fact, of the part played by these reformers. That for which the forests of Poitou gave occasion is exceedingly interesting from different points of view, and it derives besides special importance from the circumstance that the *reformation* was begun by one of the brothers of the great minister, Charles Colbert de Croissy, who had been previously charged to present to the king a memoir on the general condition of the province; it was, moreover, a reformation completed by an important personage, "Charles-Honoré Barentin, Chevalier, Seigneur d'Hardivilliers, Maison-Celles, Les Belles-Ruries, Maderas, and Monnoye; Counsellor of the King in all his

* Even capital punishment, for the Master des Eaux et Forêts of Epernay was condemned to death.

Councils ; Ordinary Master of Requests of the Palace ; President in the Grand Council," and the "Sieur Thoreau du Tillou, Councillor of the King in the Presidency of Poitiers," who gave to the one and the other of these Commissioners his co-operation as sub-delegate.

Entrusted with a commission for the "*Reformation des Eaux et Forêts*" of Poitou, by "Letters Patent of his Majesty, given at Vincennes, the 3rd day of October, 1663," Charles Colbert, on the 29th January, 1665, enjoined in an ordinance "all proprietary lands, possessors and holders of lands, houses, and heritages situated within the forest of Moulriers* within the boundaries and within half a league beyond the same, as also to all those who claim forest rights of great or small usage,—of felling trees, of fuel, of charcoal burning, of brick making, of lime-burning, of other servitudes or other rights, whatever they may be, in the said forest, and in the environs of the same, to present their titles and authoritative documents establishing their rights." This ordinance, renewing a measure enjoined in a general way by a Decree of Council of the 15th October, 1661, authorized, moreover, the *closing* of the forest,—that is to say, "prohibits the sending of any cattle to pasture, and the felling or removing of any wood," until a new order.

On the 12th May, 1665, and following days, he made, preceded by the Sieur Thoreau, a "visite externe" of the forest, or, in other words, a reconnaissance of its boundaries. On the 28th August and following days of the same year President Bavantin made in detail "la visite interne." The surveyors were then appointed to make out a general plan, as well as to "measure and survey places in dispute," of which the Sieur François Garnier, "Painter in Ordinary to the King," was charged "to prepare in presence of the party the diagram and description."

Finally, after a circumstantial inquest—after a thorough examination of the different questions raised on the 30th April, 1667,—two decisions were delivered by M. Barentin, "guided in the successive steps by the Ordinance." The first related to the boundaries and the rights of usage. It ordained the restoration to the "body of the forest" of a great number of usurped forest lots, fraudulently sold or more rarely illegally let. The extent of these forest lots exceeded 1,100 *arpens*, of which scarcely 25 *arpens* were only let. Damages and penalties were, moreover, adjudged against the holders of these lands, and also against private individuals who had constructed lime-kilns or brick-kilns near or within the forest, or who without legal right had taken wood from within its boundaries. The total amount of penalties which fell upon near a hundred individuals exceeded 12,000 livres. The Sieur de

* A forest which still exists under the same name, about 12 kilometres from Poitiers.

Bessay, Seigneur De Traversay, and De Cremault had to pay alone more than 4,000 livres of penalties and damages.

The number of parties holding rights of usage, or who said that they held such, was very considerable. The titles of *four* only were recognised as valid; and one of these, the Sieur Chastaigner, Count de Saint-Georges, was condemned to make restitution of the produce of 53 *arpens* of coppice wood from 1635, which he had appropriated in excess of 101 *arpens* to which he had right. As for *thirty-four* others, "private parties or communities, of whatsoever quality or conditions they might be," the sentence "refused to them absolutely all rights of usage, and of everything of the kind, whatsoever it might be," as having "produced no titles authorizing these."

The second sentence pronounced in the matter of the forest of Moulière had reference to frauds committed in the exploitation and the management of it. After the enumeration of the documents produced in the course of the examination, and a *résumé* of the allegations made, both of the accused and of the witnesses—an enumeration and *résumé* which fills more than a hundred pages in folio,—there are given details of the sentences; these varying, in different cases, fell on "Jean-Baptiste Jouslard, Sieur d'Airon, *ci-devant* Grand Master des *eaux et forêts* of the Audit Department of Poictou; Charles de Lauzon, at present Grand Master; Isaye Chesneau, Lieutenant of the said Grand Master; Pierre Baron, *Procureur du Roi* in the same; Jean Estourneau, Comptroller; Jacques Vezien, Recorder; Jean Mettoys, Jacques Aymard, also Recorders; Olivier Demeocq, Sergeant Warder; François Gardemault, François Gervaise, Samuel Persevault, Charles Viault, Guards; Bonaventure Dreux, *Procureur du Roi*, in the Bureau of Finance at Poitiers; M. Artus Gouffier, Duke of Rouannais, Peer of France." Finally, near *two hundred* private persons, "mortgagees of the king's domains, or associates or officers of such merchants, salesmen, and inhabitants of hamlets or villages bordering on the royal domain.

If the abuses had been grave, and so much were they so that the forest was then entirely ruined—"for there did not remain any tree, excepting on the *triage*" given up to the Count de Saint-Georges,—the measures taken for their repression were, to say the least, severe. The sentence required all the officers and officials of Moulière to demit their offices with little delay; it declared them "incapable of holding any office or discharging any function in the forests of his Majesty." One of them, called Boisson, surnamed Labrosse, an official of a mortgagee, was "condemned to do penance in his shirt—head and feet bare,—a rope round his neck, followed by the public executioner, and holding in his hand a torch, two pounds in weight, before the gate and principal entry of the *Palais Royal* of the city of Poitiers, and to be banished

for ever from the county of Poitou and Guyenne." Sales made from the year 1635 were declared null, and the total of the pecuniary penalties amounted to the enormous sum, especially for that period, of 275,000 livres, of which about 9,000 had to be paid in the form of alms.

The sentences against the forest officers and their subordinates were based on the ground that they had "presumptuously, fraudulently, and wickedly committed and permitted all the malversations and wastes which had occasioned the ruin of the forests of his Majesty;" and on the ground that they had "sold the wood of the king, and received the money, . . . erased, altered, and added to the minutes of sale, and with a bad intention left many blanks in the deeds and papers; . . . consumed the wood on their lime-kilns and brick-kilns within the heart of the forest; . . . illegally received taxes, fees, and firewood." The other persons condemned were treated as their accomplices in "the frauds and monopolies," or perpetrators of the misdemeanours, and of the robberies committed on the property of the king.

The commissioner for reformation of the forest, after having pronounced these sentences, completed his mission by the preparation of a report, now of no great interest, on the measures to be adopted to restore the forest woods of Moulière; and he caused to be printed (1667) a collection of these works, which was published at Poitiers by "John Fleurian, printer and bookseller in ordinary to the king for the city and university." It is in folio; it is now *extremely rare*; and it bears the following title:—"La Reformation Generales des a Forêts et Bois de a Majesté de la Province de Poitou, par Messieurs Colbert et Barentien, Conseillers du Roy en tous ses Conseils, Maistre des Requests ordinaires de son Hostel, Commissaires départis, pour l'exécution de ses ordres dans la Généralité de Poitiers, et pour la dite reformation;" and the motto, without being exempt from the magniloquence of style prevalent at the time, indicates rather happily the importance and the nature of the work. It is a verse from Ezekiel:—" *Scient omnia ligna regionis quia ego Dominus; Humiliavi lignum sublime; Exaltavi lignum humile; Siccavi lignum viride; Et frondere feci lignum aridum.*"*

In connection with the preceding narrative, M. Joubain makes the remarks—"For some years past some noise has been made about reforms to be introduced into our forest administration. Despite the similitude of the woods, it does not, let us thank God, refer to anything resembling the reformation we have just sketched.

"The middle of this century, thanks especially to the School of

* "All the trees of the field shall know that I the Lord have brought down the high tree, have exalted the low tree, have dried up the green tree, and have made the dry tree to flourish."—Ezek. xvii. 24.

Forestry at Nancy, has seen produced and diffused, theories and new methods both in sylviculture and in forest management. Although these be beyond all doubt superior to those which preceded them, it is not easy, it seems to us, to foresee, what value they will have two hundred years hence for foresters, the successors of us of the present day. It may be, alas! that they will judge us to be in but a middling condition, but instructed by our deeds they ought at least to have for us the respect to which functionaries who are conscientious and men of integrity are entitled. This assurance enables us to face without excessive suffering the thought that we may appear in the eyes of our great-grandchildren and other descendants, as men but little skilled in science. Are we unwilling that it should be so, in accordance with the inevitable law of progress?"



1 pp. 546-556

II.—THE FRENCH FOREST BUDGET FOR 1880.

IN the memorandum of Foreign Exchanges which appeared in the issue for October, 1879, it was noted that in the *Revue des Eaux et Forêts* of the preceding month there was a reprint of the draft proposal of the Board of Agriculture and Commerce, in regard to the administration of the State forests of France for 1880.

I.—Under the head of *Personnel du Service des Forêts* it is stated that there was asked a credit for 5,461,067 francs,* a sum exceeding by 92,600 francs what had been granted for 1879; and in justification of this it is stated that the work of réboisement or planting had attained, and was continuously acquiring, an increasing importance, but the means placed at the disposal of the Forest Administration were inadequate, and rendered it impracticable to carry out the measures entrusted to them with the energy which was desirable. It was impossible to obtain, excepting at distant intervals, and in amount altogether disproportionate to the development of the works, some trifling augmentation of funds, and it was feared that thus it might be until some calamity like the inundation of the Garonne in 1875 should occur to arouse public opinion. The reference is to the work of replanting mountain ranges with trees, shrubs, or herbs, as a means of preventing the formation of torrents, a work on which I have reported largely, and to an inundation in regard to which I have given copious details in a volume entitled "Réboisement in France." †

It is stated that surveys of new areas of an aggregate of 100,000 hectares, or roughly estimated 250,000 acres, were being prepared, and that the preceding year had shown the urgent necessity which existed for the appointment of a Commission of Réboisement in the Department of the Hérault for the survey of the torrential affluents of the Orb and the Hérault, with a view to preventing the recurrence of the sad disasters which befel this department in 1875, in connection with

* In scientific works published in countries in which a metrical system has not been introduced, it is becoming customary to make use of the French weights, measures, and coins. The franc may be reckoned in round numbers as equivalent to tenpence sterling, twenty-five francs to a guinea, 5,461,067 francs to £227,545, and 92,600 francs to £3,858.

† London: Henry S. King & Co., 1876.

the inundation referred to. Further, that the Minister of Public Works had solicited the co-operation of the Administrator of Forests to give a specification of works urgently required in the department of the Savoie, and in the basin of the Garonne, and that the creation of a Commission of réboisement in the region of the Savoie had been found absolutely indispensable.

Reference was made to the necessity of entrusting such commissions to inspectors, high-class officers in the service, and it was stated that it was impossible to urge this too strongly. While the service required a special staff of officers composed almost exclusively of men possessed of the requisite knowledge, experience, and maturity of judgment, the greater part would be of the rank of sub-inspector, and to secure unity of purpose and action it was necessary that the chief in command should have the undisputable authority of superior rank.

In view of all 50,600 francs were required, and 42,000 francs were required as an average indemnity of 100 francs each to 420 *chefs de cantonnements* for travelling expenses and the keep of horses. The superior officers had often certified that the *chefs de cantonnements* did not make their journeys so frequently as was necessary, but that the indemnities allowed to them were in many cases very insufficient, and that in the public interest these should be raised. In 1865, when these indemnities were determined, they were insufficient to cover the expenses incurred in these journeys on occasions in which they were ordered; and since then the expenses have been augmented through a rise in the charges at inns, and in the expense of horse keep and of transport.

By the committee charged with the examination of the budget, the increased credit under the first head was approved; but to that under the second head objection was taken on grounds which were stated, and by the Chamber the grant exclusive of this was made.

II.—For constructions, réboisements, and gazonnements, there was asked a credit for 3,927,085 francs, (£163,629), being a million of francs (£41,667), in excess of what was granted in 1879.

Exception has been taken in the *Journal of Forestry* to my making occasional use of French terms. My doing so arises from my not knowing English terms corresponding exactly to those I employ, and my considering it better to adopt the foreign term than to attempt to coin one. The additional million was asked chiefly for works of réboisement, for which good use would be found if the desired augmentation of 50,600 francs just referred to were granted. After the disasters occasioned in 1875 by the overflowing of the Garonne and the Hérault, and their affluents, the Minister of Finance and the Minister of Public Works gave assurance that measures would be

concerted between the departments over which they respectively presided, to be taken with a view to prevent the re-occurrence of such calamities. Many surveys, which were subsequently undertaken, had been completed, but, in the absence of funds, the works of réboisement had not been begun. Subsequently the Minister of Public Works had, as has been stated, solicited the co-operation of the Forest Administration to give a specification of works urgently called for in Savoie. Information furnished by the Engineers of Roads and Bridges showed that the four torrents of Saint-Martin, the Grillaz, the Pousset, and the Saint-Julien, all affluents of the Aër, were causing every year great destruction, and it was of importance to arrest this without delay. And, as was stated by the Minister of Public Works, every system of extinction of torrents is based on the réboisement of the basin of reception. The work was to be undertaken in the coming spring by officials already designated, and they would be partially completed before the close of the year. But the execution of the works could not be undertaken if the necessary credit were not conditionally granted. The sum stated was the minimum which would be required. According to information in possession of the Administration, to execute the works in Savoie alone would absorb more than a million of francs; and it was stated that it was impossible to attach too great prominence to the essential fact, which, according to the opinion of the Corps of Engineers of Roads and Bridges and of the Forest Corps, completely covers and governs the question, and which is this—that the scourge of inundations cannot be averted without the preventive action of works of réboisement, and that there was consequently an urgent necessity to carry out these works with the least possible loss of time.

The Budget Committee, in reporting on this, called attention to the fact that out of the total grant applied for, there had to be met the expenses of the construction of forest roads and subsidies to public roads facilitating the exploitation of forests, and the erection of forest lodges; and further, 1. To grant seeds and plants, and subsidies in money to communes and private individuals undertaking works of réboisement or gazonnement; 2. To acquire lands within areas in which works of réboisement were declared to be of public utility; 3. The execution of works intended to buy ground and extinguish torrents by such works over areas in which they were compulsory; and 4. Subsidies to individuals and communes possessed of servitudes, to promote the substitution of cattle for sheep, and to secure the conservation of mountain pastures. And in regard to the extra million called for they enter at large on a detailed statement of what has been done, and with what results, giving tabulated statements as well as details, all showing how effectually réboisement

had arrested torrents, and that for the completion of the work in the Alps, in the Cevennes and the plateau of Central France, and in the Pyrenees, there would be required 148 millions of francs (upwards of £6,000,000 sterling), and 72 millions more (upwards of £3,000,000 sterling) for the purchase of land ; and they recommended that the extra million applied for should unhesitatingly be granted.

"We are all," say they in their concluding sentence, "deeply impressed with the thought—better far spend a million in réboisement, than have to give such a sum to sufferers from inundations ;" and the grant was made unanimously by the Chamber, together with an addition of 5,000 francs to be employed in developing roads to facilitate the exploitation of communal forests, the effect of which, it was anticipated, might be to raise the mean proceeds of 360,000 hectares, or 900,000 acres, of forests from five francs to fifty francs per hectare.

III.—Under the head of *Matériel du Service des Forêts*, a credit of 2,869,045 francs (£119,533) was applied for and granted. The amount was the same as was allowed in 1879, and was appropriated to the purchase of marking hammers and plates, expenses of felling and the dressing of trees when economically necessary, maintenance of roads and fences, allowance for house-rent to officers for whom forest lodges are not provided ; with, the purchase of ground beyond the limits of operations of réboisement, wooded or not wooded, the conservation of which is requested in the public interest ; the filling up of void spaces in forests by sowing or planting trees ; the introduction of valuable trees, such as the oak, or the tillage of poor soils, and the planting them with resinous trees, and work on the dunes or drift sands.

The State owns about 78,000 hectares (185,000 acres) of dunes, situated mostly between the Loire and the Adour ; and the credit is available, 1st, to establish there a line of defence parallel to the shore, to avert the invasion of these by drift-sand ; and 2nd, to fix and plant with maritime pines, which are subsequently exploited, the sand deposits behind the littoral dune. The credit is also available for grants to be made to private individuals for like works executed by them ; and for the acquisition of enclosed dunes, under reservation of the right of redemption guaranteed by law to proprietors whose dunes have been taken up and planted by the good service of the Forest Administration. Detailed information in regard to these pine plantations I have given in a volume entitled, "*Pine Plantations and Sand Wastes in France*."*

IV.—For instruction in forestry there was asked a grant of 208,785 francs (£8,700), the same amount as was granted for 1879. The Committee of the Chamber reported that the State maintained at Nancy a

* London: Simpkin, Marshall & Co., 1878.

School for recruiting the higher staff of the Forest Administration, and a group of forests at the service of the school. Residence was required of students during the first two years of their studies there; but the expenses of clothing and board of students were met by their relations, who deposited 900 francs (£37 10s.) at entrance, and an annual sum of 1,500 francs (£62 10s.) for those two years, as advances to be repaid so far as they were not exhausted.

The expenses met by the State comprised, for a sum of 98,800 francs (£4,117), the salaries of the director, the professors, the employés, and those of the students, who were *gardes généraux* during the third year of their course, called that of *application*. A sum of 6,000 francs was appropriated to four bursaries, to be granted to sons of forest sub-officials; and a sum of 17,150 francs was set aside to meet the expense of excursions and travelling expenses of professors, and of students who were *gardes généraux* during the third year of their course of study.

The school is recruited, as are the other educational institutions, with candidates passing an entrance examination, with the exception that students of the Polytechnic School are not required to submit to this. The number of students admitted annually is at present fourteen or fifteen.

By the Administration it was stated that an extra parliamentary commission, charged by the Minister of Agriculture and Commerce to consider changes to be introduced into the existing organization of the Forest Administration, had intimated their intention to propose in regard to instruction modifications of considerable importance, which would probably entail an increase of expenditure; but that the amount which would be required to meet this could not be known till the Commission had completed its work; and that thus it might require a supplementary grant. And the Budget Committee of the Chamber reported that the sub-committee of reorganization were of opinion that the present mode of admitting students should be continued; but that there should be a reduction of fifty points in the minimum standard of entrance examination, and a reduction of the age below which pupils might be admitted to the Institute and to the National Agricultural Schools.

The expenses of proceedings in connection with entrance examinations amount to 5,400 fr. To this have to be added 18,525 fr. for expense of materials, giving a total of 145,875 fr. (£6,078) as the credit required for the school at Nancy.

The staffs of the companies of the *chasseurs forestiers* consist now of agents drawn from the school before there was organized there a course of military drill. The Administration is consequently under the necessity to order a certain number of them annually to Nancy for a

month for drill. It is anticipated that it will prove advantageous to all of them to be recalled thither for this purpose periodically. A sum of 20,000 fr. is required to meet the travelling expenses and the expense of residence at Nancy of forty of these agents, at the rate of 200 fr. (£8 6s.) each.

There is also an organization for imparting what is designated secondary instruction in forestry at other schools situated at Villers-Cotterets, Grenoble, and Toulouse.

There are admitted into these without entrance examination forest overseers under forty years of age. The course of instruction extends over seven months, and is attended by agents in active service. Those who pass satisfactorily the final examination are declared eligible to the appointment of *garde général adjoint*.

This instruction represents an annual expense of 22,300 fr.

The sub-committee to which had been submitted the question relative to instruction in forestry have proved that the whole system of these schools fails generally to produce men fitted for the duties of *garde général adjoint* which the regulations require them to discharge, and they recommended that they should be given up, as not accomplishing the purpose for which they were organized.

The school Des Barres (Loiret) is next referred to by the Budget Committee. This may be considered an extensive experimental arboretum. It is strictly speaking a Forest school, while that at Nancy, strictly speaking, is a School of forestry, as I have stated elsewhere.* The designation *Ecole Forestière*, or forest school, was given to the establishment apparently in contradistinction, on the one hand, to *nursery*, a designation borrowed from domestic life; and in contradistinction on the other hand to a plantation or forest, it being a collection of trees raised from seed obtained from forests, or from nurserymen and seedsmen of note, and reared with a view to the study of their habits, their identity, and their differences.

In the pamphlet cited I have given details of the early history of this arboretum under its founder, M. Vilmorin, and in the volume "On Pine Plantations in France," cited before, I have given in detail the observations made by M. Vilmorin on varieties of the Scotch fir, *Pinus sylvestris*. Subsequently to the death of M. Vilmorin it became State

* "The Schools of Forestry in Europe: a Plea for the creation of a School of forestry in connection with the Arboretum at Edinburgh." Edinburgh, Oliver and Boyd, 1877. In this it is shown that such a school is a desideratum, while there exists in the Edinburgh University and Watt Institution provision for imparting most of the instruction required; and accounts are given of existing schools of forestry in Prussia, Saxony, Hanover, Hesse Darmstad, Wurtemberg, Bavaria, Austria, Poland, Russia, Finland, Sweden, France, Italy, and Spain.

property, since which time it has been greatly extended; and the Budget Committee report :—

This school receives for two years after entrance examination, sons of forest overseers about twenty years of age, and prepares them for employment as gardeners or forest warders, giving them instruction in French, drawing, mathematics, surveying, and silviculture, and in all the details of forest service.

The expenses of this school amount to 20,610 francs, from which are paid the salaries of a director, of a *garde général* or warder, and of a brigadier, the wages of the students, and other expenses for material.

They further report that the sub-committee of reorganization have nothing but commendation and praise for the school at Barres; and they propose to substitute three similar schools for the so-called secondary schools at Villers-Cotterets, Grenoble, and Toulouse, which they had recommended should be discontinued.

The whole credit applied for for forest instruction, 208,785 francs, was granted.

V.—For the various expenses of the forest service there were asked 2,016,930 francs (£84,040), which was 68,480 francs (£2,852) in excess of what was granted for 1879. Under this head were comprised—

1. A sum of 10,000 francs for the buying up of remaining forest servitudes, and the settling outside the forest of parties having rights of usage, the forests of the State being now almost entirely freed of such servitudes.

2. A sum of 1,500,000 francs as the contribution due on account of the State forests towards the repairs of roads of different descriptions.

3. A sum of 22,000 francs for office expenses of thirty-two forest conservators.

4. A sum of 105,356 francs for travelling expenses of Inspectors-General, Conservators, and Inspectors, and of transport, being the sum appropriated to this in 1879. And the additional sum of 68,480 fr. was applied for to allow the superior officers to make more frequent tours of inspection in accordance with what was required by the sub-committee of reorganization.

5. A sum of 30,000 francs to be put at the disposal of the Forest Administration as a fund in aid of the employés and their families.

6. Sub-officers appointed to the forest service receive an indemnity of 100 francs on change of place, and overseers of other classes receive on entering on duty a fresh suit of clothes supplied by the State. To meet such expenses a credit of 32,100 francs was required.

7. For expenses of prosecution and expenses of adjudications of different kinds, a provisional credit of 213,000 francs was asked.

8. Lastly, a sum of 30,000 francs was introduced into the budget under the somewhat vague head of accidental and unforeseen expenses.

In regard to the extra credit applied for under the fourth head, that of travelling expenses, it was stated by the Administration that it was asked for to meet the necessity which had been repeatedly established of requiring the superior officials to make more frequently the tour of their several districts. The commission appointed by the Minister to report on modifications and improvements which might be introduced into the existing organization of the Forest Administration, had again brought forward the necessity which there was for this, and admitted that to insure this service it would be proper to fix a minimum number of days to be devoted to such tours—namely, sixty days per annum for the conservators and ninety days for the inspectors,—and that when the subject was studied more closely, and the practical details were brought under consideration, it would be found that the credit applied for, so far from being an excessive one, would scarcely meet the expense of what was desired.

That, as a matter of fact, each conservator, upon an average, had four inspectors' districts and thirteen *cantonnements* under his charge; and an average of two days a year being given to each inspector's office, verifying records, &c., and to attending to the annual sales, which would be under the mark of what would be required; on the other hand, taking into account the distances to be traversed, and the time employed in controlling the bookkeeping of the offices, it might be affirmed that four days would hardly suffice for an active conservator to obtain a general idea of the condition of the service at each *cantonnement*. Thus is it that the number of sixty days has been specified as a minimum ($4 \times 2 + 13 \times 4 = 60$), and in this no account is taken of extraordinary service which may be required, or of exceptional and unforeseen tours which it may be necessary to make.

That the inspector, who has on an average about three *Chefs de Cantonnements* under his orders, devotes at present more than fifty days a year to operations connected with the trees reserved to bear seed, and to the harvesting of seed, of which work, however, he only does a portion, as the sub-inspector is charged with the direction of about one-third of it. On the other hand, in requiring of this superior officer during the rest of the year to visit each *cantonnement* twice a month, there is not asked more than is absolutely necessary to enable him to keep the service completely in hand, and to give to it an efficient direction. There would then be required of this officer forty-eight days ($3 \times 2 \times 8$), which added to the fifty previously referred to, give a total of ninety-eight days. And this again is without mention of accidental derangements, which lead to time being occupied with other matters, to give instructions in regard to which can only be entrusted to the chief officer.

That the Superior Commission, in proposing to fix the minimum

number of days to be appropriated to journeys of visitation at sixty and ninety for conservators and inspectors, had not exceeded the requirements of the service.

That taking this as the basis of calculation, the result would be as follows:—at present conservators employ on an average thirty days on their annual visitations, for which they are allowed 20 francs (16s. 8d.) a day, and there are thirty-three conservators' circuits, involving an expenditure of $30 \times 20 \times 33 = 19,800$ francs (£925); so that there would be required under this head a like sum in addition.

That an allocation of 55,000 francs (£2,291), is at present made for travelling expenses of inspectors, and the number of inspectors being 144, and the allowance a minimum of 8 francs (6s. 8d.) a day, there would be required for ninety days ($90 \times 144 \times 8$) 103,680, or an increase of (103,680—55,000) 48,680 francs, thus requiring for additional travelling expenses of conservators and inspectors (19,800+48,680) 68,480 francs. Upon this the Budget Committee reported that without disparaging the utility of more frequent tours of visitation and inspection, they did not recommend an additional credit of 68,480 francs for this believing that the credit of nearly two millions might be stretched to cover all requirements; and by the Chambers the credit for 1,948,450 francs, the same sum as was given for 1879, was granted.

VI.—Under the head of "Reimbursement on Diverse Products," the Administration asks for a credit of 100,000 francs, the amount of credit granted for 1879. This was for the purpose of covering what might be received in excess of estimate from proceeds of sales of accessory products, from penalties, or received by the State by intermediate title. The Budget Committee considered the amount excessive, seeing that there was a surplus from this credit for 1878 of 76,000 francs; and they recommended that the credit should be reduced by 50,000 francs; and a credit of 50,000 francs (£2,083) was granted by the Chamber according to the Report of the Budget Committee, subject to conditions of evident error.

The Forest Administration manages about a million of hectares (two and a half million of acres) of State forests, and counsels or carries out the management of about two millions of hectares (five million acres), of forests belonging to commissioners and public institutions.

The value of the products of the forests was estimated for 1880 at 38,522,600 frs. (£1,605,104), the total receipts at 38,242,806 (£1,595,117), the total expense at 35,724,017 (£1,488,500).

A Decree of 15th December, 1877, withdrew the administration of forests from the Department of the Minister of Finance, to place it under that of the Minister of Agriculture, and subsequent to this important modifications in the organization of the service were introduced.

The central Administration previous to the transfer comprised a Director-General, with a salary of 25,000 francs ; two administrators' chiefs of division, 15,000 francs each ; two examiners-general, 82,000 francs each ; seven chiefs of bureau, from 7,000 to 9,000 francs ; twelve under secretaries, from 4,500 to 5,500 ; twenty-four clerks in all, 1,600 to 4,000. Besides this fixed staff the bureaux had an auxiliary staff of one inspector, six sub-inspectors, and one *garde-général*, or warder.

Now the Under Secretary of State, as President of the Administrative Council, executes the functions of the Director-General. The Council is composed of six inspectors-general, two of the first class with 15,000 francs (600 gs.) each, and four of the second class with 12,000 francs (480 gs.) each ; these have taken the place of the two administrators and the two examiners. This arrangement has entailed an augmentation of 27,000 francs for salaries, and of 12,000 francs for expenses.

The work done by the bureaux has been apportioned among four *Services-Généraux*, having each at its head a conservator, with a salary of from 8,000 (320 gs.) to 10,000 francs (400 gs.). The conservator who is chief of the personal staff draws 12,000 francs (480 gs.), he is also charged with the direction of the three other services, and he acts as secretary to the administrative council.

The four services are each divided into two sections, directed by an inspector, having under his order two sub-inspectors. The inspectors have salaries of 5,000 francs (200 gs.) each, with 500 francs (20 gs.) for house-rent. The sub-inspectors salaries of 4,000 francs (160 gs.) with 400 francs (16 gs.) for house-rent. With the exception of these allowances for house-rent their pay is the same as that of officers of the same rank on outdoor services.

The number of clerks drawn from sub-officers of the service has been reduced from twenty-four to sixteen, and the maximum of salaries from 4,000 (160 gs.) to 3,500 francs (140 gs.)*

The auxiliary staff consists now of only these agents, with another employed, it is said, as a supernumerary.

The central Administration is now a simple staff of detached forest officials of high rank, and it takes great credit to itself for having rendered the office work more intelligible and more methodical, and the proceedings more hierarchical, whereby collisions and irritations are prevented. It certainly presents better guarantees for special competency, and improves the position of the forest corps ; but the employment of so many forest officials on it has entailed an increase of

* But it is alleged that the last-stated amount is evidently erroneous. In 1879 the receipts were estimated at 38,102,600, and the expense at 13,607,732, as the sum-total of all the credits granted for 1880.

expenditure, and it is suggested that in making the forest administration an exclusive body—an autonomous service—within the department of the Minister of Agriculture, occasion has been given for inconvenience produced by the *esprit de corps*. In the sub-committee of reorganization a minority have given expression to the opinion that it would be advantageous to commingle in some proportion, to be afterwards determined, the technical with the purely administrative element; and it was suggested by the Budget Committee that the administrative element might be of use in protecting the fiscal and general interests of the State against financial consequences of the professional element, which has always a disposition to look only at the amelioration of the service and make little account of the increase of public burdens. But they add that the new arrangement was too recent to allow of conclusive proofs being given of aught after a fail trial. *see p.*



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